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### MEMORANDUM

To: Paul Peronard  
Libby Technical Assistance Unit (TAU)  
From: Bill Brattin, Lynn Woodbury  
Date: August 7, 2007  
Re: Dust Sampling Approach for Preliminary Design Inspection (PDI)

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Under current site protocols, dust sampling is performed both during the initial Remedial Investigation (RI) or Contaminant Screening Study (CSS) investigation at a property, and also during a follow-up Preliminary Design Inspection (PDI) that occurs whenever one or more triggers are exceeded at a property.

Figure 1 presents a flow diagram which describes the current sampling protocol for the CSS or RI sampling programs. As seen, a dust sample is collected in an interior living space if one or more of the following conditions are true:

- Vermiculite-containing insulation (VCI) is present or presence is unknown
- VCI was present in the past
- Vermiculite is present in friable building materials
- Secondary source indications are present (e.g., former miner, resident with health issues)
- Vermiculite is observed in outdoor soils

Dust samples are also collected under the PDI whenever either an interior or exterior clean-up is scheduled. As part of the PDI, two types of dust samples are collected from each level or floor, one 3-point composite that is representative of high traffic areas and one 3-point composite that is representative of horizontal surfaces.

The question you asked us to evaluate is whether or not dust sampling as part of the PDI could be reduced or eliminated. In order to assess this question, we assumed that the chief goal of dust sample collection is to identify properties where indoor dust levels exceed 5000 s/cm<sup>2</sup> (this condition is a trigger for indoor dust clean-up).

Based on this, we investigated the false negative rate that would occur if dust samples were collected only during the CSS/RI but not the PDI. In this evaluation, a false negative is defined as a property that has a dust of 5000 s/cm<sup>2</sup> or higher but is not recognized as such.

We found data for 144 properties where dust sampling was performed both during the CSS/RI and during the PDI<sup>a</sup>. Of these, there were 9 properties with one or more dust values above 5,000 s/cm<sup>2</sup> based on either the CSS/RI and/or the PDI. In all cases, these high dust levels were identified as a result of dust samples collected during the CSS/RI, and there were no cases of high dust levels discovered during the PDI that were not already known from the CSS sampling. Therefore, had dust sampling not been performed during the PDI, 9 out of 9 properties would have been identified, and the false negative rate would be 0/9 = 0%. False negative rates up to 5% are often considered acceptable by EPA.

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<sup>a</sup> All data presented in this memo reflect information available in the Libby2DB based on a download performed on July 25, 2007. The dust dataset utilized in this memo is restricted to OU4 properties, and dust field samples that are representative of living areas (i.e., shed, garage samples, etc. are excluded).

Note that there are 11 properties where dust samples collected during the PDI were above 5,000 s/cm<sup>2</sup>. Of these, 7 were collected from areas that were not representative of living areas (e.g., samples were from a shed or garage). At the remaining 4 properties, CSS/RI dust samples were not collected. This is because dust sampling protocols in the past were somewhat different from current protocols, and dust sampling was often deferred from the CSS/RI to the PDI to determine if clean-up was necessary. Had these properties been sampled under the current CSS/RI sampling protocol, it is expected that this would have identified the high dust levels.

## **Conclusion**

Although data are limited, based on the data available at present, it appears that dust sampling during the CSS/RI is likely to be adequate to identify properties where dust levels exceed 5000 s/cm<sup>2</sup> in indoor living spaces, and that dust sampling during the PDI is not likely to identify additional properties that were not detected during the CSS program.

# Figure 1: Strategy for Sample Collection as part of CSS and RI Activities

